

COSMETIC COMPOSITIONS HAVING RETARDING ACTION ON THE REGROWTH OF SUPERFLUOUS HAIR

The present invention relates to the cosmetic field.

More precisely, the present invention relates to cosmetic compositions having retarding action on the regrowth of superfluous hair.

TECHNOLOGICAL BACKGROUND

5 In humans, the main characteristics concerning the development of hair (number, color, thickness, length, and distribution) are the consequence of an action mediated by sexual hormones, which in their turn derive from a genetic expression.

10 In Western Countries, as well as in other socioeconomically advanced Countries, hair of limbs and armpits, pubic hair which can come out of bathing suits, as well as hair which can, although rarely, grow around the mammary areola, is considered unaesthetic in women. The term "superfluous hair" indicates indeed the growth of hair in these areas. As such superfluous hair is of course unwanted, it can be subjected to epilation (removal of the whole hair, roots included, by means of wax or electrolysis) or depilation (removal of the hair starting from the surface of the skin by chemical destruction of keratin, blade or electric shaving, or repeated traumatism of hair).

15 All of these procedures are, however, at least partly traumatic to the skin, they may induce both inflammation in the tissues directly underlying the treated skin and lesions in capillaries and peripheral small vessels, there is therefore the need for such consequences to be reduced as well as for the regrowth of superfluous hair to be retarded as much as possible.

20 The present invention relates to cosmetic compositions having retarding action on the regrowth of superfluous hair.

25 More particularly, the present invention relates to cosmetic compositions

containing fatty acids and antiandrogenic sterols from *Serenoa* (*Serenoa repens*) and/or from *Cucurbita* seeds (*Cucurbita pepo*).

The compositions of the invention can contain either said components pure or extracts containing them, in amounts from 0.1 to 3.0%.

5 According to a preferred aspect, the present invention relates to cosmetic compositions further containing anti-inflammatory and/or vasal protective agents.

According to a further preferred aspect, the present invention relates to cosmetic compositions containing anti-inflammatory and/or vasal protective agents
10 selected from:

- anti-inflammatory triterpenes from liquorice (*Glycyrrhiza glabra*);
- anti-edematous and anti-inflammatory saponins from horse chestnut (*Aesculus hyppocastanum*);
- triterpenes from *Terminalia sericea*;
- 15 - analgesic and anti-inflammatory isobutylamides from *Zanthoxylum bungeanum* (sin *Alatum*);
- vasal protective ginkgoflavoneglucosides and terpenes from ginkgo (*Ginkgo biloba*);
- vasal protective polyphenols from grapes seeds (*Vitis vinifera*);
- 20 - vasal protective anthocyanosides from bilberries (*Vaccinium myrtillus*);
- vasal protective saponins from butcher's broom (*Ruscus aculeatus*).

These preferred compositions of the invention can contain either the above indicated components pure or extracts containing them, in amounts from 0.1 to 3.0%.

25 All the derivatives listed above can optionally be complexed with carriers capable of improving their absorption and effectiveness, in particular with phospholipids.

The vegetable derivatives indicated above, as well as the processes for the

preparation thereof, are known, inter alia, from US 5,547,673, WO 00/02570. EP 0.283,713, EP 0.250.953, EP 0.275,224.

It is known from the prior art that said derivatives have anti-inflammatory, analgesic, vasal tonifying, anti-edematous, tonifying activities, which make them
5 useful in the treatment of inflammatory conditions and vasculopathies, also when in the presence of capillary fragility.

"Retarding action " on hair regrowth herein means an action which induces both a delay in hair growth rate and a decrease in the amount of growing hair.

10 According to the present invention, the cosmetic compositions can be presented in the form of either post-depilatory or post-epilatory compositions, i.e. to be used subsequently depilation or epilation, or they may be included in depilatory formulations.

"Depilatory formulations" herein means formulations capable of removing
15 hair also by the cleavage of keratin disulfide bonds, thereby destroying hair or weakening it to the extent that it can easily be mechanically removed (by means of a spatula, a sponge or simply by washing with water). Conventional depilatory formulations can contain as active ingredient thiol derivatives, such as thioglycolic and thiolactic acids and the alkali and alkaline-earth metal salts
20 thereof; ethanolamine thioglycate; aminoethanethiol; mercaptopropionic acid; thioglycic and thioacetic acids; barium sulfate.

"Post-depilatory compositions" as used in the following will mean both post-depilatory and post-epilatory compositions, for the sake of simplicity.

The compositions of the invention will be suitably formulated in liquid
25 form, such as lotion, milk, solution, emulsion, or in the solid or semi-solid form, for example cream, paste, gel, foam. For this purpose, the compositions of the invention will contain cosmetically acceptable carriers conventionally used for the preparation of formulations for the topical use, for example viscosity agents,

such as tragacanth, xanthan gum, gypsum, clay, magnesium oxide, talc; chelating agents, such as ethylenediaminetetracetic acid and disodium edetate; emollients, such as cetyl and stearyl alcohols, liquid paraffin, glyceryl stearate, silicon oils, hydrocarbon oils and waxes; wetting agents, such as urea or 1,3-
5 butylene glycol; emulsifiers, such as medium chain triglycerids, acrylic acid polymers, ethoxylated stearyl or cetyl alcohols, polyoxyethylene alkyl ethers; absorption promoters, such as cyclodextrans and liposomes; antioxidants, such as ascorbyl palmitate, tocopherol; preservatives, such as glycerin, propylene glycol; stabilizing agents and fragrances.

10 Depilatory compositions can further contain conventional depilation accelerators, such as those based on ureas, thioureas and biguanides.

The present invention further relates to a method of cosmetic treatment in order to retard the growth of superfluous hair, which method consists in applying a cosmetically effective amount of the compositions of the invention on the body
15 area where unwanted hair grows. The amount of the composition to be applied and the frequency of application will vary depending on the area to treat and on the personal characteristics of the user, but it will generally range from 0.01 to 0.1 ml of composition per cm² of skin area, to be applied 1 to 3 times a day during the first times of treatment, subsequently reducing the frequency to one
20 application on alternate days, depending on the results obtained.

Tests were carried out on healthy female volunteers, of age ranging from 22 to 40 years, using:

- a) post-depilatory compositions according to the invention, for use after superfluous hair had been removed with conventional methods;
- 25 b) conventional depilatory compositions, containing the compositions of the invention;
- c) conventional depilatory compositions, containing no compositions of the invention.

In the case of treatments with a) and b), hair regrowth was complete not before 3 weeks, progressively decreasing with the progress of treatment; furthermore, regrown hair appeared weakened. Conversely, in treatment with c), hair regrowth was complete within 2 - 3 weeks.

5 Some examples of cosmetic compositions according to the invention are disclosed in the following.

EXAMPLE 1

Post-depilatory formulation in gel

2% LIPOPHILIC EXTRACT OF SERENOA REPENS - 0.3% RUSCOGENINS -
10 0.5% ZANTHOXYLUM BUNGEANUM EXTRACT.

100 g contain:

	SERENOA REPENS* LIPOPHILIC EXTRACT	2.00 g
	RUSCOGENINS	0.30 g
	sol. 20% ZANTHOXYLUM BUNGEANUM** EXTRACT	0.50 g
15	Ethanol	20.00 g
	PEG-6-Caprylic /Capric Glycerides (softigen 767-Huls)	15.00 g
	Propylene glycol	10.00 g
	Oleth 20 (Volpo 20 - Croda)	5.00 g
20	Dimethicone copolyol	2.50 g
	Carbomer	2.00 g
	Triethanolamine	1.00 g
	Zinc ricinoleate (Tegodor HY77 - Teco)	0.20 g
	Menthol	0.50 g
25	Preservatives	q.s.
	Antioxidants	q.s.
	Purified water	q.s. to 100.00 g

* Prepared according to US 5,547,673.

** Prepared according to WO00/02570.

EXAMPLE 2

Post-depilatory formulation as oil-in-water emulsion

1% GLYCYRRHETINIC ACID COMPLEX WITH PHOSPHOLIPIDS – 2%

5 SERENOA REPENS – 1% RUSCOGENINS

100 g contain:

	GLYCYRRHETINIC ACID COMPLEX WITH PHOSPHOLIPIDS*	1.00 g
	RUSCOGENINS**	1.00 g
	SERENOA REPENS PURIFIED EXTRACT	2.00 g
10	Glyceryl stearate (Cutina GMS-Henkel)	7.00 g
	Polysorbate 60 (Tween 60 - ICI)	5.00 g
	Propylene glycol	5.00 g
	Octyldodecanol (Eutanol G - Henkel)	4.00 g
	Wheat germ oil	3.00 g
15	PEG-5 soy sterols	2.00 g
	(Generol 122 E5 - Henkel)	
	Dimethicone	1.00 g
	Carbomer	0.60 g
	Tocopherol	0.20 g
20	Ascorbyl Palmitate	0.10 g
	10% sol. NaOH	2.00 g
	Disodium EDTA	0.10 g
	Zinc ricinoleate (Tegodor CW90-Tego)	0.20 g
	Preservatives	q.s.
25	Fragrance	q.s.
	Purified water	q.s. to 100.00 g

* Prepared according to EP 0283713.

** Prepared according to EP 0250953.

EXAMPLE 3

Post-depilatory formulation as oil-in-water emulsion

1.5% SERICOSIDE COMPLEX WITH PHOSPHOLIPIDS – 2% CUCURBITA
PEPO LIPOPHILIC EXTRACT - 0.5% RUSCOGENINS

5 100 g contain:

SERICOSIDE COMPLEX WITH PHOSPHOLIPIDS*	1.50 g
CUCURBITA PEPO LIPOPHILIC EXTRACT	2.00 g
RUSCOGENINS C	0.50 g
Glycerin	30.00 g

10 Glyceryl Stearate (and) Ceteareth-20 (and)

Ceteareth-12 (and) Cetearyl Alcohol (and)

Cetyl Palmitate (Emulgade SE- Henkel)	7.00 g
---------------------------------------	--------

Ceteareth-20 (Eumulgin B2 - Henkel)	2.00 g
-------------------------------------	--------

Dimethicone copolyol	2.00 g
----------------------	--------

15 (SF 1188 - General Electric)

Zinc Ricinoleate (Tegodor CW90-Tego)	0.20 g
--------------------------------------	--------

Disodium edetate	0.10 g
------------------	--------

Tocopherol	0.20 g
------------	--------

Ascorbyl Palmitate	0.10 g
--------------------	--------

20 Preservatives	q.s.
------------------	------

Fragrance	q.s.
-----------	------

Purified water	q.s. to 100.00 g
----------------	------------------

* Prepared according to EP 0283713.

EXAMPLE 4

25 Post-depilatory formulation as oil-in-water lotion

1.5% ESCIN/ β -Sitosterol COMPLEX WITH PHOSPHOLIPIDS - 2.0 %
CUCURBITA PEPO LIPOPHILIC EXTRACT - 1.0% RUSCUS ACULEATUS
EXTRACT

100 g contain:

	ESCIN/ β -sitosterol COMPLEX WITH PHOSPHOLIPIDS*	1.50 g
	RUSCUS DRY EXTRACT	1.00 g
	CUCURBITA PEPO LIPOPHILIC EXTRACT	2.00 g
5	Glycerin	5.00 g
	Polyisoprene (Syntesqual - Vevy)	2.50 g
	Isostearyl isostearate (Gattefossè)	2.50 g
	Cetyl Palmitate (Crodamol CP-Croda)	2.00 g
	Decyl Oleate (Cetiol V - Henkel)	2.00 g
10	Cetearyl Isononanoate (Cetiol SN - Henkel)	2.00 g
	Polysorbate 80 (Tween 80 - ICI)	1.00 g
	Zinc Ricinoleate (Tegodor CW90 - Tego)	0.20 g
	Tocopherol	0.20 g
	Ascorbyl palmitate	0.10 g
15	Disodium edetate	0.10 g
	Polyacrylamide (and) C13-14 isoparaffin	
	(and) laureth-7 (Sepigel 305- Seppic)	2.00 g
	Preservatives	q.s.
	Fragrance	q.s.
20	Purified water	q.s. to 100.00 g

* Prepared according to EP 0283713.

EXAMPLE 5

Post-depilatory formulation as oil-in-water emulsion

	1.5% GLYCYRRHETINIC ACID COMPLEX WITH PHOSPHOLIPIDS - 0.5%	
25	VITIS VINIFERA PROCYANIDOLIC OLIGOMERS COMPLEX WITH PHOSPHOLIPIDS - 2% SERENOA REPENS LIPOPHILIC EXTRACT	

100 g contain:

GLYCYRRHETINIC ACID COMPLEX WITH PHOSPHOLIPIDS * 1.50 g

VITIS VINIFERA PROCYANIDOLIC OLIGOMERS **

	COMPLEX WITH PHOSPHOLIPIDS	0.50 g
	SERENOA REPENS LIPOPHILIC EXTRACT	2.00 g
	Propylene glycol	15.00 g
5	Modified jojoba oil	5.00 g
	(Cetiol J600 - Henkel)	
	Cetyl Alcohol	5.00 g
	Glyceryl stearate (Cutina GMS - Henkel)	5.00 g
	Polysorbate 60 (Tween 60 - ICI)	3.00 g
10	Hectorite (and) hydroxyethylcellulose	
	(Betone LT - Rheox)	0.50 g
	Dimethicone 350	0.50 g
	Zinc Ricinoleate (Tegodor CW90 -Tego)	0.20 g
	Disodium edetate	0.10 g
15	Tocopherol	0.20 g
	Ascorbyl palmitate	0.10 g
	Sodium Metabisulfite	0.10 g
	Citric acid	0.10 g
	Preservatives	q.s.
20	Fragrance	q.s.
	Purified water	q.s. to 100.00 g

* Prepared according to EP0283713.

** Prepared according to EP0275224.

EXAMPLE 6

25 Post-depilatory formulation as alcoholic lotion

0.1% 18/ β -GLYCYRRHETINIC ACID - 1% GINGKO BILOBA - 0.5%
SERENOA R.

18/ β -GLYCYRRHETINIC ACID 0.10 g

	GINGKO BILOBA DRY EXTRACT	1.00 g
	(cont. 20% saponins)	
	SERENOA REPENS PURIFIED EXTRACT	0.50 g
	Cyclomethicone	10.00 g
5	PEG-40 Hydrogenated castor oil	
	(Cremophor RH40-BASF)	1.00 g
	Zinc Ricinoleate (Tegodor HY77- Tego)	0.20 g
	Butylated Hydroxytoluene	
	0.05 g	
10	Fragrance	q.s.
	Alcohol	q.s. to 100.00 ml

EXAMPLE 7

Post-depilatory formulation in gel

2% SERENOA REPENS LIPOPHILIC EXTRACT

15	100 g contain:	
	SERENOA REPENS LIPOPHILIC EXTRACT	2.00 g
	Ethanol	20.00 g
	PEG-6-Caprylic/Capric Glycerides	
	(softigen 767-Huls)	15.00 g
20	Propylene glycol	10.00 g
	Oleth 20 (Volpo 20 - Croda)	5.00 g
	Dimethicone copolyol	2.50 g
	Carbomer	2.00 g
	Triethanolamine	1.00 g
25	Zinc ricinoleate (Tegodor HY77 - Teco)	0.20 g
	Menthol	0.50 g
	Preservatives	q.s.
	Antioxidants	q.s.

Purified water q.s. to 100.00 g

EXAMPLE 8

Post-depilatory formulation as oil-in-water emulsion

2% CUCURBITA PEPO LIPOPHILIC EXTRACT

5 100 g contain:

CUCURBITA PEPO LIPOPHILIC EXTRACT 2.00 g

Glycerin 30.00 g

Glyceryl Stearate (and) Ceteareth-20 (and)

Ceteareth-12 (and) Cetearyl Alcohol (and)

10 Cetyl Palmitate (Emulgade SE- Henkel) 7.00 g

Ceteareth-20 (Eumulgin B2 - Henkel) 2.00 g

Dimethicone copolyol 2.00 g

(SF 1188 - General Electric)

Zinc Ricinoleate (Tegodor CW90-Tego) 0.20 g

15 Disodium edetate 0.10 g

Tocopherol 0.20 g

Ascorbyl Palmitate 0.10 g

Preservatives q.s.

Fragrance q.s.

20 Purified water q.s. to 100.00 g

CLAIMS

1. Cosmetic compositions having retarding action on the growth of superfluous hair, which contain fatty acids and antiandrogenic sterols from serenoa (*Serenoa repens*) and/or from Cucurbita seeds (*Cucurbita pepo*).
5

2. Cosmetic compositions as claimed in claim 1, further containing anti-inflammatory and/or vasal protective agents.

3. Cosmetic compositions as claimed in claim 2, wherein the anti-inflammatory and/or vasal protective agents are selected from:

- 10 - anti-inflammatory triterpenes from liquorice (*Glycyrrhiza glabra*);
- anti-edematous and anti-inflammatory saponins from horse chestnut (*Aesculus hyppocastanum*);
- triterpenes from *Terminalia sericea*;
- analgesic and anti-inflammatory isobutylamides from *Zanthoxylum bungeanum* (sin *Alatum*);
15
- vasal protective ginkgoflavoneglucosides and terpenes from ginkgo (*Ginkgo biloba*);
- vasal protective polyphenols from grapes seeds (*Vitis vinifera*);
- vasal protective anthocyanosides from bilberries (*Vaccinium myrtillus*);
20
- vasal protective saponins from butcher's broom (*Ruscus aculeatus*).

4. Cosmetic compositions as claimed in any one of the above claims, wherein the active ingredients are complexed with carriers improving absorption and effectiveness.

5. Cosmetic compositions as claimed in claim 4, wherein the complexing agents are phospholipids.
25

6. Cosmetic compositions as claimed in the above claims, wherein the active ingredients are present in amounts from 0.1 to 3.0%.

7. Cosmetic composition as claimed in the above claims, containing 2%

Serenoa repens lipophilic extract - 0.3% ruscogenins - 0.5% Xanthoxylum bungeanum lipophilic extract.

8. Cosmetic composition according to claims 1 - 6, containing 1% glycyrrhetic acid complex with phospholipids - 2% Serenoa repens - 1% ruscogenins.

9. Cosmetic composition according to claims 1 - 6, containing 1.5% sericoside complex with phospholipids - 2% Cucurbita pepo lipophilic extract - 0.5% ruscogenins.

10. Cosmetic composition according to claims 1 - 6, containing 1.5% escin/ β -sitosterol complex with phospholipids - 2% Cucurbita pepo lipophilic extract - 1.0% Ruscus extract.

11. Cosmetic composition according to claims 1 - 6, containing 1.5% glycyrrhetic acid complex with phospholipids - 0.5% Vitis vinifera procyanidole oligomers complex with phospholipids - 2% Serenoa repens lipophilic extract.

12. Cosmetic composition according to claims 1 - 6, containing 0.1% 18/ β -glycyrrhetic acid - 1% Ginkgo biloba - 0.5% Serenoa repens.

13. Cosmetic compositions as claimed in the above claims, in the liquid, solid or semisolid form.

14. Cosmetic compositions as claimed in claim 13, in the form of lotion, milk, solution, emulsion, cream, paste, gel, foam.

15. Cosmetic compositions as claimed in the above claims, for the post-epilatory and post-depilatory applications.

16. Cosmetic compositions as claimed in the above claims, further containing one or more conventional depilatory agents selected from thiol derivatives, thioglycolic and thiolactic acids and the alkali and alkaline-earth metal salts thereof; ethanolamine thioglycate; aminoethanethiol; mercaptopropionic acid; thioglycolic and thioacetic acids; barium sulfate.

17. Cosmetic compositions as claimed in claim 16, further containing a conventional depilation accelerator selected from the group consisting of ureas, thioureas and biguanides.

5 18. A method of cosmetic treatment for retarding the growth of superfluous hair, which consists in applying a cosmetically effective amount of the compositions of claims 1 – 17 on the body area where hair to be removed grow.